

SEQUENCE LISTING

<110> Meyers, Rachel
Hunter, John Joseph

<120> 62112, A NOVEL HUMAN DEHYDROGENASE AND
USES THEREOF

<130> MNI-187

<150> 60/229,831
<151> 2000-08-31

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<212> DNA

<213> Homo sapiens

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<221> CDS

<222> (67)...(1932)

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Met Ser Gly Cys Gly Leu Phe Leu Arg Thr Thr Ala Ala Ala
1 5 10

cgt gcc tgc cgg ggt ctg gtg gtc tct acc gcg aac cgg cgg cta ctg 156
Arg Ala Cys Arg Gly Leu Val Val Ser Thr Ala Asn Arg Arg Leu Leu
15 20 25 30

cgc acc agc ccc cct gta cga gct ttc gcc aaa gag ctt ttc cta ggc 204
Arg Thr Ser Pro Pro Val Arg Ala Phe Ala Lys Glu Leu Phe Leu Gly
35 40 45

aaa atc aag aag aaa gaa gtt ttc cca ttt cca gaa gtt agc caa gat 252
Lys Ile Lys Lys Lys Glu Val Phe Pro Phe Pro Glu Val Ser Gln Asp
50 55 60

gaa ctt aat gaa atc aat cag ttc ttg gga ccc gtc gaa aaa ttc ttc 300
Glu Leu Asn Glu Ile Asn Gln Phe Leu Gly Pro Val Glu Lys Phe Phe
65 70 75

act gaa gag gtg gac tcc cga aaa att gac cag gaa ggg aaa atc cca 348
Thr Glu Glu Val Asp Ser Arg Lys Ile Asp Gln Glu Gly Lys Ile Pro
80 85 90

gat gaa act ttg gag aaa ttg aag agc cta ggg ctt ttt ggg ctg caa 396
Asp Glu Thr Leu Glu Lys Leu Lys Ser Leu Gly Leu Phe Gly Leu Gln
95 100 105 110

gtc cca gaa gaa tat ggt ggc ctg ggc ttc tcc aac acc atg tac tca 444
Val Pro Glu Glu Tyr Gly Gly Leu Gly Phe Ser Asn Thr Met Tyr Ser
115 120 125

aga cta ggg gag atc atc agc atg gat ggg tcc atc act qtg acc ctg Arg Leu Gly Glu Ile Ile Ser Met Asp Gly Ser Ile Thr Val Thr Leu 130 135 140	492
gca gcg cac cag gct att ggc ctc aag ggg atc atc ttg gct ggc act Ala Ala His Gln Ala Ile Gly Leu Lys Gly Ile Ile Leu Ala Gly Thr 145 150 155	540
gag gag cag aaa gcc aaa tac ttg cct aaa ctg gcg tcc ggg gag cac Glu Glu Gln Lys Ala Lys Tyr Leu Pro Lys Leu Ala Ser Gly Glu His 160 165 170	588
att gca gcc ttc tgc ctc acg gag cca gcc agt ggg agc gat gca gcc Ile Ala Ala Phe Cys Leu Thr Glu Pro Ala Ser Gly Ser Asp Ala Ala 175 180 185 190	636
tca atc cgg agc aga gcc aca cta agt gaa gac aag aag cac tac atc Ser Ile Arg Ser Arg Ala Thr Leu Ser Glu Asp Lys Lys His Tyr Ile 195 200 205	684
ttc aat ggc tcc aag gtc tgg att act aat gga gga ctg gcc aat att Leu Asn Gly Ser Lys Val Trp Ile Thr Asn Gly Gly Leu Ala Asn Ile 210 215 220	732
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aaa gac aaa atc aca gca ttc ata gta gaa aga gac ttt ggt gga gtc Lys Asp Lys Ile Thr Ala Phe Ile Val Glu Arg Asp Phe Gly Gly Val 240 245 250	828
act aat ggg aaa ccc gaa gat aaa tta ggc att cgg ggc tcc aac act Thr Asn Gly Lys Pro Glu Asp Lys Leu Gly Ile Arg Gly Ser Asn Thr 255 260 265 270	876
tgt gaa gtc cat ttt gaa aac acc aag ata cct gtg gaa aac atc ctt Cys Glu Val His Phe Glu Asn Thr Lys Ile Pro Val Glu Asn Ile Leu 275 280 285	924
gga gag gtc gga gat ggg ttt aag gtg gcc atg aac atc ctc aac agc Gly Glu Val Gly Asp Gly Phe Lys Val Ala Met Asn Ile Leu Asn Ser 290 295 300	972
ggc cgg ttc agc atg ggc agc gtc gtg gct ggg ctg ctc aag aga ttg Gly Arg Phe Ser Met Gly Ser Val Val Ala Gly Leu Leu Lys Arg Leu 305 310 315	1020
att gaa atg act gct gag tac gcc tgc aca agg aaa cag ttt aac aag Ile Glu Met Thr Ala Glu Tyr Ala Cys Thr Arg Lys Gln Phe Asn Lys 320 325 330	1068
agg ctc agt gaa ttt gga ttg att cag gag aaa ttt gca ctg atg gct Arg Leu Ser Glu Phe Gly Leu Ile Gln Glu Lys Phe Ala Leu Met Ala 335 340 345 350	1116
cag aag gct tac gtc atg gag agt atg acc tac ctc aca gca ggg atg Gln Lys Ala Tyr Val Met Glu Ser Met Thr Tyr Leu Thr Ala Gly Met 355 360 365	1164
ctg gac caa cct ggc ttt ccc gac tgc tcc atc gag gca gcc atg gtg	1212

Leu Asp Gln Pro Gly Phe Pro Asp Cys Ser Ile Glu Ala Ala Met Val	370	375	380	
aag gtg ttc agc tcc gag gcc gcc tgg cag tgt gtg agt gag ggc ctg				1260
Lys Val Phe Ser Ser Glu Ala Ala Trp Gln Cys Val Ser Glu Ala Leu				
385	390	395		
cag atc ctc ggg ggc ttg ggc tac aca agg gac tat ccg tac gag cgc				1308
Gln Ile Leu Gly Gly Leu Gly Tyr Thr Arg Asp Tyr Pro Tyr Glu Arg				
400	405	410		
ata ctg cgt gac acc cgc atc ctc ctc atc ttc gag gga acc aat gag				1356
Ile Leu Arg Asp Thr Arg Ile Leu Leu Ile Phe Glu Gly Thr Asn Glu				
415	420	425	430	
att ctc cgg atg tac atc gcc ctg acg ggt cag cat gcc ggc cgc				1404
Ile Leu Arg Met Tyr Ile Ala Leu Thr Gly Leu Gln His Ala Gly Arg				
435	440	445		
atc ctg act acc agg atc cat gag ctt aaa cag gcc aaa gtg agc aca				1452
Ile Leu Thr Thr Arg Ile His Glu Leu Lys Gln Ala Lys Val Ser Thr				
450	455	460		
gtc atg gat acc gtt ggc cgg agg ctt cgg gac tcc ctg ggc cga act				1500
Val Met Asp Thr Val Gly Arg Arg Leu Arg Asp Ser Leu Gly Arg Thr				
465	470	475		
gtg gac ctg ggg ctg aca ggc aac cat gga gtt gtg cac ccc agt ctt				1548
Val Asp Leu Gly Leu Thr Gly Asn His Gly Val Val His Pro Ser Leu				
480	485	490		
gcg gac agt gcc aac aag ttt gag gag aac acc tac tgc ttc ggc cgg				1596
Ala Asp Ser Ala Asn Lys Phe Glu Glu Asn Thr Tyr Cys Phe Gly Arg				
495	500	505	510	
acc gtg gag aca ctg ctg ctc cgc ttt ggc aag acc atc atc atg gag gag				1644
Thr Val Glu Thr Leu Leu Arg Phe Gly Lys Thr Ile Met Glu Glu				
515	520	525		
cag ctg gta ctg aag cgg gtg gcc aac atc ctc atc aac ctg tat ggc				1692
Gln Leu Val Lys Arg Val Ala Asn Ile Leu Ile Asn Leu Tyr Gly				
530	535	540		
atg acg gcc gtg ctg tcc cgg gcc aag cgc tcc atc cgc att ggg ctc				1740
Met Thr Ala Val Leu Ser Arg Ala Ser Arg Ser Ile Arg Ile Gly Leu				
545	550	555		
cgc aac cac gac cac gag gtt ctc ttg gcc aac acc ttc tgc gtg gaa				1788
Arg Asn His Asp His Glu Val Leu Leu Ala Asn Thr Phe Cys Val Glu				
560	565	570		
gct tac ttg cag aat ctc ttc agc ctc tct cag ctg gac aag tat gct				1836
Ala Tyr Leu Gln Asn Leu Phe Ser Leu Ser Gln Leu Asp Lys Tyr Ala				
575	580	585	590	
cca gaa aac cta gat gag cag att aag aaa gtg tcc cag cag atc ctt				1884
Pro Glu Asn Leu Asp Glu Gln Ile Lys Lys Val Ser Gln Gln Ile Leu				
595	600	605		
gag aag cga gcc tat atc tgt gcc cac cct ctg gac agg aca tgc tga				1932
Glu Lys Arg Ala Tyr Ile Cys Ala His Pro Leu Asp Arg Thr Cys *				

610

615

620

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 aqtgtccctt aacaggacca tcaacgcttc tqaactgagc cggagagaga gaatggatt 2172
 gctgaccctt ggaactggcg ggtattctgg tcaattggaga gacaccatag tggaaactgg 2232
 gggtatgtc gctgcctcca gggtgtgagg tgggtggggc cctgtgtcag gtgtggatag 2292
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<213> Homo sapiens

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Ser	Pro	Pro	Val	Arg	Ala	Phe	Ala	Lys	Glu	Leu	Phe	Leu	Gly	Lys	Ile
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Lys	Lys	Lys	Glu	Val	Phe	Pro	Phe	Pro	Glu	Val	Ser	Gln	Asp	Glu	Leu
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Asn	Glu	Ile	Asn	Gln	Phe	Leu	Gly	Pro	Val	Glu	Lys	Phe	Phe	Thr	Glu
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Glu	Val	Asp	Ser	Arg	Lys	Ile	Asp	Gln	Glu	Gly	Lys	Ile	Pro	Asp	Glu
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Thr	Leu	Glu	Lys	Leu	Lys	Ser	Leu	Gly	Leu	Phe	Gly	Leu	Gln	Val	Pro
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Glu	Glu	Tyr	Gly	Gly	Leu	Gly	Phe	Ser	Asn	Thr	Met	Tyr	Ser	Arg	Leu
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Gly	Glu	Ile	Ile	Ser	Met	Asp	Gly	Ser	Ile	Thr	Val	Thr	Leu	Ala	Ala
															130
His	Gln	Ala	Ile	Gly	Leu	Lys	Gly	Ile	Ile	Leu	Ala	Gly	Thr	Glu	
															145
Gln	Lys	Ala	Lys	Tyr	Leu	Pro	Lys	Leu	Ala	Ser	Gly	Glu	His	Ile	Ala
															165
Ala	Phe	Cys	Leu	Thr	Glu	Pro	Ala	Ser	Gly	Ser	Asp	Ala	Ala	Ser	Ile
															180
Arg	Ser	Arg	Ala	Thr	Leu	Ser	Glu	Asp	Lys	Lys	His	Tyr	Ile	Leu	Asn
															195
Gly	Ser	Lys	Val	Trp	Ile	Thr	Asn	Gly	Gly	Leu	Ala	Asn	Ile	Phe	Thr
															210
Val	Phe	Ala	Lys	Thr	Glu	Val	Val	Asp	Ser	Gly	Ser	Val	Lys	Asp	
															225
Lys	Ile	Thr	Ala	Phe	Ile	Val	Glu	Arg	Asp	Phe	Gly	Gly	Val	Thr	Asn
															245
Gly	Lys	Pro	Glu	Asp	Lys	Leu	Gly	Ile	Arg	Gly	Ser	Asn	Thr	Cys	Glu
															260
Val	His	Phe	Glu	Asn	Thr	Lys	Ile	Pro	Val	Glu	Asn	Ile	Leu	Gly	Glu
															275
Val	Gly	Asp	Gly	Phe	Lys	Val	Ala	Met	Asn	Ile	Leu	Asn	Ser	Gly	Arg
															290
Phe	Ser	Met	Gly	Ser	Val	Val	Ala	Gly	Leu	Leu	Lys	Arg	Leu	Ile	Glu
															305
Met	Thr	Ala	Glu	Tyr	Ala	Cys	Thr	Arg	Lys	Gln	Phe	Asn	Lys	Arg	Leu
															325
Ser	Glu	Phe	Gly	Leu	Ile	Gln	Glu	Lys	Phe	Ala	Leu	Met	Ala	Gln	Lys

340 Ala Tyr Val Met Glu Ser Met Thr Tyr Leu Thr Ala Gly Met Leu Asp 355 Gln Pro Gly Phe Pro Asp Cys Ser Ile Glu Ala Ala Met Val Lys Val 370 Phe Ser Ser Glu Ala Ala Trp Gln Cys Val Ser Glu Ala Leu Gln Ile 385 Leu Gly Gly Leu Gly Tyr Thr Arg Asp Tyr Pro Tyr Glu Arg Ile Leu 405 Arg Asp Thr Arg Ile Leu Leu Ile Phe Glu Gly Thr Asn Glu Ile Leu 420 Arg Met Tyr Ile Ala Leu Thr Gly Leu Gln His Ala Gly Arg Ile Leu 435 Thr Thr Arg Ile His Glu Leu Lys Gln Ala Lys Val Ser Thr Val Met 450	345 360 375 390 395 400 380 405 410 415 425 430 445 455 460 475 480 495 505 510 525 535 540 555 560 570 575 585 590 605 615 620	350 365 380 395 400 415 430 445 450 460 475 480 495 510 525 540 555 560 575 590 605 620
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agc ccg cct gta cga gct ttc gcc aaa gag ctt ttc cta ggc aaa atc Ser Pro Val Arg Ala Phe Ala Lys Glu Leu Phe Leu Gly Lys Ile 35 40 45	144
aag aag aaa gaa gtt ttc cca ttt cca gaa gtt agc caa gat gaa ctt Lys Lys Glu Val Phe Pro Phe Pro Glu Val Ser Gln Asp Glu Leu	192

50

55

60

aat gaa atc aat cag ttc ttg gga ccc gtg gaa aaa ttc ttc act gaa 240
 Asn Glu Ile Asn Gln Phe Leu Gly Pro Val Glu Lys Phe Phe Thr Glu
 65 70 75 80

gag gtg gac tcc cga aaa att gac cag gaa ggg aaa atc cca gat gaa 288
 Glu Val Asp Ser Arg Lys Ile Asp Gln Glu Gly Lys Ile Pro Asp Glu
 85 90 95

act ttg gag aaa ttg aag agc cta ggg ctt ttt ggg ctg caa gtc cca 336
 Thr Leu Glu Lys Leu Lys Ser Leu Gly Leu Phe Gly Leu Gln Val Pro
 100 105 110

gaa gaa tat ggt ggc ctg ggc ttc tcc aac acc atg tac tca aga cta 384
 Glu Glu Tyr Gly Gly Leu Gly Phe Ser Asn Thr Met Tyr Ser Arg Leu
 115 120 125

ggg gag atc atc agc atg gat ggg tcc atc act gtg acc ctc gca gcg 432
 Gly Glu Ile Ile Ser Met Asp Gly Ser Ile Thr Val Thr Leu Ala Ala
 130 135 140

cac cag gct att ggc ctc aag ggg atc atc ttg gct ggc act gag gag 480
 His Gln Ala Ile Gly Leu Lys Gly Ile Ile Leu Ala Gly Thr Glu Glu
 145 150 155 160

cag aaa gcc aaa tac ttg cct aaa ctg gcg tcc ggg gag cac att gca 528
 Gln Lys Ala Lys Tyr Leu Pro Lys Leu Ala Ser Gly Glu His Ile Ala
 165 170 175

gcc ttc tgc ctc acg gag cca gcc agt ggg agc gat gca gcc tca atc 576
 Ala Phe Cys Leu Thr Glu Pro Ala Ser Gly Ser Asp Ala Ala Ser Ile
 180 185 190

cgg agc aga gcc aca cta agt gaa gac aag cac tac atc ctc aat 624
 Arg Ser Arg Ala Thr Leu Ser Glu Asp Lys Lys His Tyr Ile Leu Asn
 195 200 205

ggc tcc aag gtc tgg att act aat gga gga ctg gcc aat att ttt act 672
 Gly Ser Lys Val Trp Ile Thr Asn Gly Gly Leu Ala Asn Ile Phe Thr
 210 215 220

gtg ttt gca aag act gag gtc gtt gat tct gat gga tca gtg aaa gag 720
 Val Phe Ala Lys Thr Glu Val Val Asp Ser Asp Gly Ser Val Lys Asp
 225 230 235 240

aaa atc aca gca ttc ata gta gaa aga gac ttt ggt gga gtc act aat 768
 Lys Ile Thr Ala Phe Ile Val Glu Arg Asp Phe Gly Gly Val Thr Asn
 245 250 255

ggg aaa ccc gaa gat aaa tta ggc att cgg ggc tcc aac act tgt gaa 816
 Gly Lys Pro Glu Asp Lys Leu Gly Ile Arg Gly Ser Asn Thr Cys Glu
 260 265 270

gtc cat ttt gaa aac acc aag ata cct gtg gaa aac atc ctt gga gag 864
 Val His Phe Glu Asn Thr Lys Ile Pro Val Glu Asn Ile Leu Gly Glu
 275 280 285

gtc gga gat ggg ttt aag gtg gcc atg aac atc ctc aac agc ggc cgg 912
 Val Gly Asp Gly Phe Lys Val Ala Met Asn Ile Leu Asn Ser Gly Arg
 290 295 300

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atg act gct gag tac gcc tgc aca agg aaa cag ttt aac aag agg ctc Met Thr Ala Glu Tyr Ala Cys Thr Arg Lys Gln Phe Asn Lys Arg Leu 325	330	335		1008
agt gaa ttt gga ttg att cag gag aaa ttt gca ctg atg gct cag aag Ser Glu Phe Gly Leu Ile Gln Glu Lys Phe Ala Leu Met Ala Gln Lys 340	345	350		1056
gct tac gtc atg gag agt atg acc tac ctc aca gca ggg atg ctg gac Ala Tyr Val Met Glu Ser Met Thr Tyr Leu Thr Ala Gly Met Leu Asp 355	360	365		1104
caa cct ggc ttt ccc gac tgc tcc atc gag gca gcc atg gtg aag gtg Gln Pro Gly Phe Pro Asp Cys Ser Ile Glu Ala Ala Met Val Lys Val 370	375	380		1152
ttc agc tcc gag gcc gcc tgg cag tgt gtg agt gag ggc ctg cag atc Phe Ser Ser Glu Ala Ala Trp Gln Cys Val Ser Glu Ala Leu Gln Ile 385	390	395	400	1200
ctc ggg ggc ttg ggc tac aca agg gac tat cog tac gag cgc ata ctg Leu Gly Gly Leu Gly Tyr Thr Arg Asp Tyr Pro Tyr Glu Arg Ile Leu 405	410	415		1248
cgt gac acc cgc atc ctc atc ttc gag gga acc aat gag att ctc Arg Asp Thr Arg Ile Leu Leu Ile Phe Glu Gly Thr Asn Gln Ile Leu 420	425	430		1296
cgg atg tac atc gcc ctg acg ggt ctg cag cat gcc ggc cgc atc ctg Arg Met Tyr Ile Ala Leu Thr Gly Leu Gln His Ala Gly Arg Ile Leu 435	440	445		1344
act acc agg atc cat gag ctt aaa cag gcc aaa gtg agc aca gtc atg Thr Thr Arg Ile His Glu Leu Lys Gln Ala Lys Val Ser Thr Val Met 450	455	460		1392
gtt acc gtt ggc cgg agg ctt cgg gac tcc ctg ggc cga act gtg gac Asp Thr Val Gly Arg Arg Leu Arg Asp Ser Leu Gly Arg Thr Val Asp 465	470	475	480	1440
ctg ggg ctg aca ggc aac cat gga gtt gtg cac ccc agt ctt ggc gac Leu Gly Leu Thr Gly Asn His Gly Val Val His Pro Ser Leu Ala Asp 485	490	495		1488
agt gcc aac aag ttt gag gag aac acc tac tgc ttc ggc cgg acc gtg Ser Ala Asn Lys Phe Glu Asn Thr Tyr Cys Phe Gly Arg Thr Val 500	505	510		1536
gag aca ctg ctg ctc cgc ttt ggc aag acc atc atg gag gag cag ctg Glu Thr Leu Leu Leu Arg Phe Gly Lys Thr Ile Met Glu Glu Gln Leu 515	520	525		1584
gta ctg aag cgg gtg ggc aac atc ctc atc aac ctg tat ggc atg acg Val Leu Lys Arg Val Ala Asn Ile Leu Ile Asn Leu Tyr Gly Met Thr 530	535	540		1632

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Ala Val Leu Ser Arg Ala Ser Arg Ser Ile Arg Ile	Gly Leu Arg Asn		
545	550	555	560
cac gac cac gag gtt ctc ttg gcc aac acc ttc tgc	gtg gaa gct tac	1728	
His Asp His Glu Val Leu Ala Asn Thr Phe Cys Val	Glu Ala Tyr		
565	570	575	
ttg cag aat ctc ttc agc ctc tct cag ctg gac aag	tat gct cca gaa	1776	
Leu Gln Asn Leu Phe Ser Leu Ser Gln Leu Asp Lys	Tyr Ala Pro Glu		
580	585	590	
aac cta gat gag cag att aag aaa gtg tcc cag cag	atc ctt gag aag	1824	
Asn Leu Asp Glu Gln Ile Lys Lys Val Ser Gln Gln	Ile Leu Glu Lys		
595	600	605	
cga gcc tat atc tgt gcc cac cct ctg gac agg aca	tgc	1863	
Arg Ala Tyr Ile Cys Ala His Pro Leu Asp Arg Thr	Cys		
610	615	620	

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